

Original Article

SOCIO-DEMOGRAPHIC FACTORS AND EDENTULISM: AN ASSOCIATION

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ABSTRACT

Objective: *The proportion of edentulous patients is on the rise in developing countries, and this has been attributed to various Factors. This study aimed to assess the relationship of socio-demographic factors to edentulism.*

Material and Methods: *This descriptive study was performed in prosthodontics department Khyber College of Dentistry(KCD) Peshawar from Jan 2017 to Jun 2017. A total of one hundred and three patients were selected using consecutive sampling technique. Among these total 103 patients, Fifty-three (51.4%) patients were males while n=50 (48.54%) were females. Patients between the age of 18 and 75 years of age were included while mentally handicapped patients excluded from the study. The relationship between gender, age, socio-economic status and Edentulism in this study population was established.*

Results: *No significant relationship between gender and denture demand was noted in the study. The demand for dentures increased with age, with the highest demands in the 5th and 6th decades of life. Besides, the lower socio-economic group had a higher demand for prostheses than the higher socioeconomic group.*

Conclusions: *The findings in this study revealed a significant relationship between socio-demographic variables and Edentulism with age, and Socio-economic status playing vital roles in edentulism and denture demand.*

Key Words: *Edentulism; Dental Caries; Periodontal Diseases.*

INTRODUCTION

Edentulism (loss of teeth) is one of the most common debilitating and irreversible conditions in our community¹, which mostly results from lack of dental education and dental care leading to dental diseases like dental caries and periodontitis². Loss of esthetics and mastication are the two disasters of edentulism.³ Edentulism has a close relationship with Age, Gender and socio-economic status of the patient⁴. Kennedy classifies edentulous patients into four classes, Class III being the most prevalent while class IV being the least common.⁵ Community-based Oral health programs are the basic needs of modern society to decrease the loss of teeth.⁶ Prevalence of edentulism in India is 15.3 %, China 8.9 %, South Africa 8.7 %, and Ghana 2.9 %⁷. Trauma, cystic lesions, neoplasia, attrition, de-

velopmental disturbances and orthodontic reasons are some other cause of teeth loss, and the treatment of edentulism may be partial denture, implant or bridge work⁸. Women, especially of low socioeconomic status, have more incidence of tooth/ teeth loss⁹. São Paulo and his colleagues also reported a statistically significant association between edentulism and aging and gender distribution with increasing loss of teeth in females, i.e., 97.6% and in males 96.8%. São Paulo and Montevideo also reported a decrease tooth loss in highly educated people than uneducated individuals.¹⁰ Little Oral health epidemiological information is available for the local population. Specifically, no information is available on the prevalence of edentulism and the associated factors. The objective of this study was to determine the Frequency and related factors of edentulism among patients of different age.

MATERIAL AND METHODS

This descriptive cross-sectional study was performed in prosthodontics department Khyber College

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of Dentistry (KCD) Peshawar from Jan 2017 to Jun 2017. Approval for the study was taken from ethical committee KCD. A total of one hundred and three (n=103) patients were selected using consecutive sampling technique. Among these total patients sample, 53 (51.4%) patients were males and 50 (48.54%) females. All patients between the age of 18 and 75 years of age were included in the study. Mentally disabled patients were excluded from the study. Informed consent was taken from all the patients. Information such as age, gender, level of education and socioeconomic status was documented. The relationship between gender, age, socio-economic status and edentulism in this study population was established.

For this study, a Standard Occupational Classification system by the office of population census and Surveys, London (OPCS 1991) was used, and patients were classified into three socioeconomic groups:

Class 1: Skilled Worker, e.g., professionals and managerial officers and retirees of this cadre.

Class 2: Unskilled workers, e.g., Artisans and traders

Class 3: Dependents, e.g., retirees of class 2, those not on a pension, students whose parents are unskilled.

Data were analyzed using SPSS Version 20. The analysis included frequency, cross tabulations and calculations of means. Association between discrete variables was tested by chi-square test.

RESULTS

A total of One hundred and three(n=103) patients attended the department of Prosthodontics during this six months period were included in the study. Results are shown in Table 1.

A total of One hundred and three(n=103) patients attended the department of Prosthodontics during this six months period were included in the study. The median age was 60years while the mean age was 56.38 ± 10.82 . Results are shown in Table 2.

Dental treatment is often highly charged. Socioeconomic status is one of the influential factors affecting the patient's state of edentulism. The criterion used for the socioeconomic categorization used in this study was a standard occupational classification system designed by the office of population census and surveys, London (OPCS 1991). Patients were classified

into three socioeconomic groups. Majority of the patients in our study belonged to ClassIII, eighty one n=81 (78.6%) with least number n=3(2.9%) in Class I [Fig.1]. Some factors affect the state of edentulism, and one of them is the access to a dental hospital that offers reasonable dental care. We found 97 (95.1%) of the total number of patients in our study belonged to the rural population. [Fig.2].

Table 1. Distribution by Gender

Gender	Number (N)	Percentage (%)
Male	53	51.45
Female	50	48.54
Total	103	100

Table 2. Denture demand by Age

Age Group	Number(N)	Percentage(%)
<25	1	0.97
25-35	4	3.88
36-45	11	10.7
46-55	26	25.24
56-65	49	47.52
66-75	12	10.67
Total	103	98.98

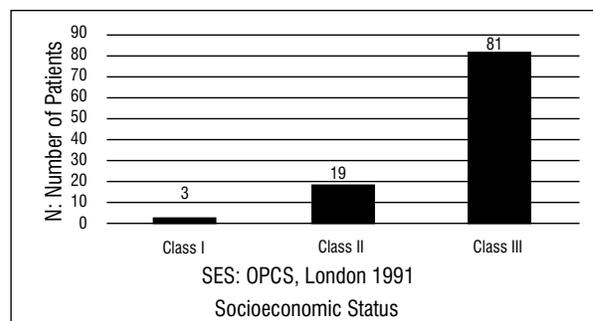


Fig 1. Socioeconomic status distribution

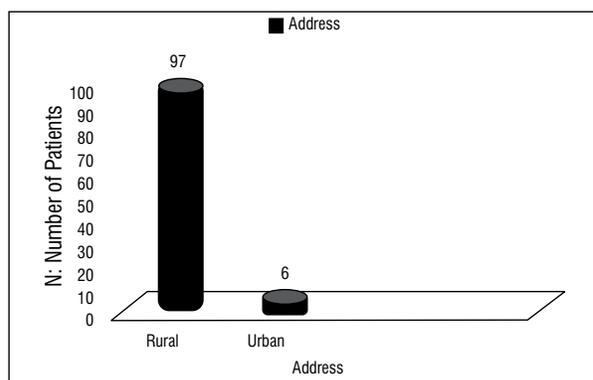


FIG 2 Address Distribution

DISCUSSION:

Edentulism of a population is a marker of dental awareness and care, provision of dental services and attitude and behavior of dentists of a community. It is considered an effective marker of population oral health¹⁴. Poor oral health significantly influences the social life of an individual¹⁵. Edentulism (loss of teeth) is one of the most common debilitating and irreversible conditions in our community¹, which mostly results from lack of dental education and dental care leading to dental diseases like dental caries and periodontitis². Loss of esthetics and mastication are the two disasters of edentulism.³ Edentulism has a close relationship with Age, Gender and socio-economic status of the patient⁴.

Our current study established that the disease factors responsible for tooth loss were age-related; with caries and periodontal diseases being the major causes of tooth mortality in children and adult respectively. Our result is the same as in the study of J.Africawc, Reddy J¹¹.

Most studies reported significant gender differences among the edentulous patients with more males becoming edentulous than females this has been attributed to the fact that males are more active than females and do not pay much attention to oral care¹². However, no significant gender difference was found in our study.

Edentulous patients with age ranging from 18 years to 72 years reported.

Majority of our study population belonged to the lower socioeconomic status. This is because those with lower socioeconomic status are more ignorant about their treatment needs and may seek treatment only after an apparent morbidity appears. Patients belonging to the higher socioeconomic status can afford the costs of dental treatment from time to time, same in the study by Barboza Solís¹³.

Our study showed that the need for complete dentures decreased with increased income. 78.6% of our population belonged to the Class III as opposed to 2.9% in Class I and 18.4% in Class II. The reason for this may be as a result of the fact that they may not be able to afford the exorbitant cost of restorative procedures hence they wait until they have lost their set of teeth to have a complete removable denture which is cheaper. The importance of socio-economic status

is further reflected in the urban-rural variance noted in this study population's demand for the denture. A large proportion of the study group belonging to the rural population demanded the complete dentures. However, this study was an all-inclusive hospital-based sample, with patients reporting for the complete denture therapy included in the study sample. Hence, its use can only be limited to the study population. A randomized population-based survey may present a better picture among KPK population.

This study observed that edentulism is related to many sociodemographic factors. Lower socioeconomic status has been identified as a major cause in edentulism. It may be related to the higher cost of dental treatment. Patients with high income tend to be more concerned about their oral health and often seek dental treatment. Patients belonging to the higher socioeconomic status are more likely to report for the treatment of partial edentulism while dentists may be confronted with more challenging cases.

CONCLUSION

This study showed no gender relationship with denture demand, with younger females being edentulous. Also, the demand for complete dentures increased with age. There was a statistically significant inverse relationship between socioeconomic levels and demand for dentures. There was more demand for prostheses among the lower socio-economic groups and rural dwellers.

REFERENCES

1. Al-Fouzan FA, Al-mejrad AL, Al-barrag M A. Adherence of Candida to complete denture surfaces in vitro: A comparison of conventional and CAD/CAM complete dentures: *J Adv Prosthodont*. 2017 Oct; 9(5): 402–408.
2. Bidra AS, Taylor TD, Agar JR. Computer-aided technology for fabricating complete dentures: a systematic review of historical background, current status, and future perspectives. *J Prosthet Dent*. 2013 Jun; 109(6):361-6.
3. Kasina SP, Ajaz T, Attili S, Surapaneni H, Cherukuri M, Srinath HP. To evaluate and compare the porosities in the acrylic mandibular denture bases processed by two different polymerization techniques, using two different brands of commercially available denture base resins - an in vitro study: *J Int Oral Health*. 2014; 6(1):72-7.
4. Jeyapalan V1, Krishnan CS2. Partial Edentulism and its Correlation to Age, Gender, Socio-economic Status and Incidence of Various Kennedy's Classes- A Literature

- Review. *J Clin Diagn Res*. 2015 Jun;9(6): ZE14-7. doi: 10.7860/JCDR/2015/13776.6124. Epub 2015 Jun 1.
5. Fayad MI1, Baig MN2, Alrawaili AMJ *Int Soc Prev Community Dent*. 2016 Dec;6(Suppl 3): S187-S191. doi: 10.4103/2231-0762.197189.
 6. Vadavadagi SV1, Srinivasa H2, Goutham GB3, Hajira N4, Lahari M4, Reddy GT5. Partial Edentulism and its Association with Socio-Demographic Variables among Subjects Attending Dental Teaching Institutions, India. *J Int Oral Health* 2015;7(Suppl 2):60-3.
 7. Kailembo A, Preet R, Stewart J W. Common risk factors and edentulism in adults, aged 50 years and over, in China, Ghana, India and South Africa: results from the WHO Study on global AGEing and adult health (SAGE). *BMC Oral Health*. 2016; 27;17(1):29.
 8. Akinboboye B, Azodo C, Soroye M. Odontostomatol Trop. Partial edentulism and unmet prosthetic needs amongst young adult Nigeria. 2014;37(145):47-52.
 9. Peres MA, Barbato PR, Reis SC, Freitas CH, Antunes JL. *Rev Saude Publica*. Tooth loss in Brazil: analysis of the 2010 Brazilian Oral Health Survey. 2013;47 (3):78-89.
 10. Singh H1, Maharaj RG2, Naidu R3. *BMC Oral Health*. Oral health among the elderly in 7 Latin American and Caribbean cities, 1999-2000: a cross-sectional study. 2015; 9(15):46.
 11. Rajani A D et al. Tooth loss – How Emotional it is for the Elderly in India?. *OHD* 2014;13(2):304.
 12. J. Africa WC, Reddy J. The association between gender and tooth loss in a small rural population of South Africa. *Science Journal of Clinical Medicine* 2013; 2(1):8-13.
 13. Solís B C. The Role of Socioeconomic Position in Determining Tooth Loss in Elderly Costa Rican: Findings from the CRELES Cohort. *Odovtos International Journal of Dental Sciences* 2017;19(3):7.
 14. Bernabé E, Sheiham A. Tooth Loss in the United Kingdom – Trends in Social Inequalities: An Age-Period-and-Cohort Analysis. *PLoS One* 2014;9(8): e104808.
 15. Frederico. Factors Related to Oral Health-Related Quality of Life of Independent Brazilian Elderly. *International Journal of Dentistry* 2013;2(4):03.